



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,669	10/22/2003	Yukihiko Ichikawa	011350-323	6501

21839 7590 10/11/2006

BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

CHU, RANDOLPH I

ART UNIT	PAPER NUMBER
----------	--------------

2624

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,669

Applicant(s)

ICHIKAWA ET AL.

Examiner

Randolph Chu

Art Unit

2632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-13 and 15-24 is/are rejected.
- 7) ☒ Claim(s) 6 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 10/23/2002. It is noted, however, that applicant has not filed a certified copy of the JP-2002-308347 application as required by 35 U.S.C. 119(b).

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 10/22/2003 has been considered by the examiner.

Specification

3. Claim 6 is objected to because of the following informalities: There is a spelling error. "Port" should be "part". Appropriate correction is required.

4. Claim 12 is objected to because of the following informalities: Device claim is depended from method claim. Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 17-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 17-24 are all directed to a distributed software agent. "Computer program" refers to software, which is functional descriptive material, which per se is nonstatutory. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases. Please refer to "United States Patent and Trademark Office OG Notices: 22 November 2005" Annex IV for further guidance.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 1 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application 2002/0003897) in view of Holladay et al. (US Patent 6,324,305).

Tanaka disclosed an image area extracting part for extracting a plurality of image areas from image data (Fig.1 ref label 19); a positional information recognizing part for recognizing positional information of each extracted image area (Fig 5A ref label S4605, paragraph [0085]); an attribute recognizing part for recognizing at least

attributes concerning whether each extracted image area is a filled closed area or an unfilled closed area (abstract, an enclosed area color detection unit that detects the colors inside the enclosed area);

Tanaka does not disclosed a file producing part for producing a file by synthesizing said image areas based on the positional information recognized by said positional information recognizing part; and a sequence setting part for setting up overlaying sequence for each image area in accordance with the recognition result of said attribute recognizing part, wherein said file producing part produces the file by overlaying said image areas in accordance with the overlaying sequence set up by said sequence setting part.

Holladay et al. teaches a file producing part for producing a file by synthesizing said image areas based on the positional information recognized by said positional information recognizing part (col. 5 lines 1-16); and a sequence setting part for setting up overlaying sequence for each image area in accordance with the recognition result of said attribute recognizing part (col. 4 lines 36-67), wherein said file producing part produces the file by overlaying said image areas in accordance with the overlaying sequence set up by said sequence setting part (col. 5 lines 1-16).

Tanaka and Holladay et al. are analogous art because they are in the "same field of endeavor", image processing of raster data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to set up overlaying sequence for image area and save into a file in the device of Tanaka.

Art Unit: 2624

The suggestion/motivation for doing so would have been that to optimize image processing by identifying / segmenting the image layer so that they can be processed individually and then recombined into a desired order to achieve a better output image.

Therefore, it would have been obvious to combine Holladay et al. with Tanaka to obtain the invention as specified in claim 1.

9. Claim 2 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305) as applied to claim 1 above and further in view of Bourder et al. (US Patent Application Pub. 2005/0116963).

Tanaka in view of Holladay et al. teaches all the limitation of claim 1 which claim 2 depends.

Tanaka in view of Holladay et al. does not teach that said sequence setting part sets up the overlaying sequence to overlay unfilled closed areas in front of filled closed areas.

Bourder et al. teaches overlaying unfilled closed areas in front of filled closed areas (paragraph [0025]).

Tanaka, Holladay et al. and Bourder et al. are analogous art because they are in the "same field of endeavor", image processing of raster data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to overlay unfilled closed areas in front of filled closed areas in the device of Tanaka and Holladay et al.

The suggestion/motivation for doing so would have been that to exhibit transparency instead of covering another object when object is unfilled (Bourder et al. , paragraph [0025]).

Therefore, it would have been obvious to combine Bourder et al. with Tanaka and Holladay et al. to obtain the invention as specified in claim 2.

10. Claim 3 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305) in further view of Bourder et al. (US Patent Application Pub. 2005/0116963) as applied to claim 2 above and in further view of Accad (US Patent 6,330,363)

Tanaka in view of Holladay et al. in further view of Bourder et al. teaches all the limitation of claim 2 which claim 3 depends.

Tanaka in view of Holladay et al. in further view of Bourder et al. does not teach that said sequence setting part sets up the overlaying sequence to overlay line areas in front of filled closed areas.

Accad teaches overlaying line areas in front of filled closed areas. (col. 7 line 60 – col.8 line 10).

Tanaka, Holladay et al., Bourder et al. and Accad are analogous art because they are in the “same field of endeavor”, image processing of raster data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to overlay line in front of filled closed areas in the device of Tanaka and Holladay et al.

The suggestion/motivation for doing so would have been that to avoid covering line by filled closed areas.

Therefore, it would have been obvious to combine Accad with Tanaka, Holladay et al. and Bourder et al. to obtain the invention as specified in claim 2.

11. Claim 4 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305) as applied to claim 1 above and further in view of Ohta et al. (US Patent 7,054,029).

Tanaka in view of Holladay et al. teaches all the limitation of claim 1 (see above) which claim 4 depends.

Tanaka in view of Holladay et al. also teach said image area extracting part comprises a first extracting part for extracting text image areas (Tanaka, Fig. 3, S4200) graphic image areas (Tanaka, Fig. 3, S4400), and photographic image areas (Tanaka, paragraph [0049]), from image data, and a second extracting part for extracting filled closed areas, unfilled closed areas, and line areas that do not form any closed areas from the extracted graphic image areas (Tanaka, Fig. 3, S4500, S4600, S4700, Fig.9 – Fig14); wherein said attribute recognizing part recognizes attributes concerning whether each extracted image area is a text image area, a photographic image area, a filled closed area, an unfilled closed area or a line area (Tanaka, paragraph [0049]), ;

Tanaka in view of Holladay et al. does not teach that said sequence setting part sets up the overlaying sequence for each image area of text image areas,

photographic image areas, filled closed areas, unfilled closed areas, and line areas in accordance with the recognition results of said attribute recognizing part.

Ohta et al. teaches that said sequence setting part sets up the overlaying sequence for each image area of text image areas, photographic image areas, filled closed areas, unfilled closed areas, and line areas in accordance with the recognition results of said attribute recognizing part (Fig 2A 112, Fig. 5, Fig. 6).

Tanaka, Holladay et al. and Ohta et al. are analogous art because they are in the "same field of endeavor", image processing of raster data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to sets up the overlaying sequence for each image area of text image areas, photographic image areas, filled closed areas, unfilled closed areas, and line areas in the device of Tanaka and Holladay et al.

The suggestion/motivation for doing so would have been that to optimize image processing by identifying / segmenting the image layer so that they can be processed individually and then recombined into a desired order to achieve a better output image.

Therefore, it would have been obvious to combine Ohta et al. with Tanaka and Holladay et al. to obtain the invention as specified in claim 4.

12. Claim 5 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305) as applied to claim 4 above and further in view of Ohta et al. (US Patent 7,054,029).

Art Unit: 2624

Tanaka in view of Holladay et al. and further in view of Ohta et al. teaches all the limitation of claim 4 (see above) which claim 5 depends.

Tanaka in view of Holladay et al. and further in view of Ohta et al. does not teach that said sequence setting part sets up the overlaying sequence to overlay text image areas in front, filled closed areas and photographic image areas in back, and unfilled closed areas and line areas in between them.

It is clear that person of ordinary skill in the art to think text as most important information, so that, overlay text image areas in front, to avoid blocking line or unfilled closed area by photographic image or filled closed area, overlay lines and unfilled closed area in the middle and photographic image and filled closed area in back.

Therefore, it would have been obvious to combine Ohta et al. with Tanaka and Holladay et al. to obtain the invention as specified in claim 5.

13. Claim 7 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305) and further in view of Ohta et al. (US Patent 7,054,029).

Tanaka in view of Holladay et al. and further in view of Ohta et al. teaches all the limitation of claim 4 (see above) which claim 7 depends.

Tanaka also teaches a vector transforming part for transforming image data in graphic image areas into vector data (Fig. 4);

a closed area extracting part for extracting closed areas based on the connection relation of a plurality of vector data (Fig. 5A); a color information judging part for

judging whether the color information of internal points and external points of the extracted closed areas are the same(Fig. 6 S4710); and a filled closed area detecting part for detecting filled closed areas based on the judgment results of the color information judging part (Fig. 6 S4750).

14. Claims 8 and 9 are rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305)

As to claim 8, Tanaka in view of Holladay et al. teaches all the limitation of claim 1 (see above) which claim 8 depends.

Tanaka also teaches document scanning unit for scanning documents to obtain input image data, wherein said image area extracting part extracts a plurality of image areas from the input image data obtained by scanning the documents (para. [0041]).

As to claim 9, Tanaka disclosed extracting a plurality of image areas from image data(Fig.1 ref label 19); recognizing positional information of each extracted image area (Fig 5A ref label S4605, paragraph [0085]); recognizing at least attributes concerning whether each extracted image area is a filled closed area or an unfilled closed area (abstract, an enclosed area color detection unit that detects the colors inside the enclosed area);

Tanaka does not disclosed producing a file by synthesizing said image areas based on positional information recognized; and setting up overlaying sequence for

each image area in accordance with the recognition result of the attributes, wherein said producing step includes producing file by overlaying said image areas in accordance with the overlaying sequence

Holladay et al. teaches producing a file by synthesizing said image areas based on positional information recognized (col. 5 lines 1-16); and setting up overlaying sequence for each image area in accordance with the recognition result of the attributes (col. 4 lines 36-67), wherein said producing step includes producing file by overlaying said image areas in accordance with the overlaying sequence, which has been set up (col. 5 lines 1-16).

Tanaka and Holladay et al. are analogous art because they are in the "same field of endeavor", image processing of raster data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to set up overlaying sequence for image area and save into a file in the method of Tanaka.

The suggestion/motivation for doing so would have been that to optimize image processing by identifying / segmenting the image layer so that they can be processed individually and then recombined into a desired order to achieve a better output image.

Therefore, it would have been obvious to combine Holladay et al. with Tanaka to obtain the invention as specified in claim 9.

15. Claim 10 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent

6,324,305) as applied to claim 9 above and further in view of Bourder et al. (US Patent Application Pub. 2005/0116963).

Tanaka in view of Holladay et al. teaches all the limitation of claim 9 which claim 10 depends.

Tanaka in view of Holladay et al. does not teach that said setting up step includes setting up an overlaying sequence to overlay unfilled closed areas in front of filled closed area.

Bourder et al. teaches overlaying unfilled closed areas in front of filled closed areas (paragraph [0025]).

Tanaka, Holladay et al. and Bourder et al. are analogous art because they are in the "same field of endeavor", image processing of raster data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to overlay unfilled closed areas in front of filled closed areas in the method of Tanaka and Holladay et al.

The suggestion/motivation for doing so would have been that to exhibit transparency instead of covering another object when object is unfilled (Bourder et al., paragraph [0025]).

Therefore, it would have been obvious to combine Bourder et al. with Tanaka and Holladay et al. to obtain the invention as specified in claim 10.

16. Claim 11 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent

Art Unit: 2624

6,324,305) in further view of Bourder et al. (US Patent Application Pub. 2005/0116963)

as applied to claim 10 above and in further view of Accad (US Patent 6,330,363)

Tanaka in view of Holladay et al. in further view of Bourder et al. teaches all the limitation of claim 10 which claim 11 depends.

Tanaka in view of Holladay et al. in further view of Bourder et al. does not teach that said sequence setting part sets up the overlaying sequence to overlay line areas in front of filled closed areas.

Accad teaches overlaying line areas in front of filled closed areas. (col. 7 line 60 – col.8 line 10).

Tanaka, Holladay et al., Bourder et al. and Accad are analogous art because they are in the “same field of endeavor”, image processing of raster data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to overlay line in front of filled closed areas in the method of Tanaka and Holladay et al.

The suggestion/motivation for doing so would have been that to avoid covering line by filled closed areas.

Therefore, it would have been obvious to combine Accad with Tanaka, Holladay et al. and Bourder et al. to obtain the invention as specified in claim 11.

17. Claim 12 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent

Art Unit: 2624

6,324,305)_as applied to claim 9 above and further in view of Ohta et al. (US Patent 7,054,029).

Tanaka in view of Holladay et al. teaches all the limitation of claim 9 (see above) which claim 12 depends.

Tanaka in view of Holladay et al. also teach extracting step includes a first extracting step for extracting text image areas (Tanaka, Fig. 3, S4200) graphic image areas (Tanaka, Fig. 3, S4400), and photographic image areas (Tanaka, paragraph [0049]), from image data, and a second extracting step for extracting filled closed areas, unfilled closed areas, and line areas that do not form any closed areas from the extracted graphic image areas (Tanaka, Fig. 3, S4500, S4600, S4700, Fig.9 –Fig14); wherein said attribute recognizing step recognizes attributes concerning whether each extracted image area is a text image area, a photographic image area, a filled closed area, an unfilled closed area or a line area (Tanaka, paragraph [0049]) ;

Tanaka in view of Holladay et al. does not teach that said sequence setting step sets up the overlaying sequence for each image area of text image areas, photographic image areas, filled closed areas, unfilled closed areas, and line areas in accordance with the recognition results of said attribute recognizing part.

Ohta et al. teaches that said setting up step sets up the overlaying sequence for each image area of text image areas, photographic image areas, filled closed areas, unfilled closed areas, and line areas in accordance with the recognition results of said attribute recognizing part (Fig 2A 112, Fig. 5, Fig. 6).

Tanaka, Holladay et al. and Ohta et al. are analogous art because they are in the "same field of endeavor", image processing of raster data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to sets up the overlaying sequence for each image area of text image areas, photographic image areas, filled closed areas, unfilled closed areas, and line areas in the method of Tanaka and Holladay et al.

The suggestion/motivation for doing so would have been that to to optimize image data compression, image is segmented into groups and each group can use different image processing method (Holladay et al., col. 1 12-39).

Therefore, it would have been obvious to combine Ohta et al. with Tanaka and Holladay et al. to obtain the invention as specified in claim 12.

18. Claim 13 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305)_as applied to claim 12 above and further in view of Ohta et al. (US Patent 7,054,029).

Tanaka in view of Holladay et al. and further in view of Ohta et al. teaches all the limitation of claim 12 (see above) which claim 13 depends.

Tanaka in view of Holladay et al. and further in view of Ohta et al. does not teach that said sequence setting up step sets up the overlaying sequence to overlay text image areas in front, filled closed areas and photographic image areas in back, and unfilled closed areas and line areas in between them.

Art Unit: 2624

It is clear that person of ordinary skill in the art to think text as most important information, so that, overlay text image areas in front, to avoid blocking line or unfilled closed area by photographic image or filled closed area, overlay lines and unfilled closed area in the middle and photographic image and filled closed area in back.

Therefore, it would have been obvious to combine Ohta et al. with Tanaka and Holladay et al. to obtain the invention as specified in claim 13.

19. Claim 15 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305) and further in view of Ohta et al. (US Patent 7,054,029).

Tanaka in view of Holladay et al. and further in view of Ohta et al. teaches all the limitation of claim 12 (see above) which claim 15 depends.

Tanaka also teaches a step of transforming image data in graphic image areas into vector data (Fig. 4);

a step of extracting closed areas based on the connection relation of a plurality of vector data (Fig. 5A); a step of judging whether the color information of internal points and external points of the extracted closed areas are the same (Fig. 6 S4710); and a step of detecting filled closed areas based on the judgment result of whether the compared color information is the same (Fig. 6 S4750).

Art Unit: 2624

20. Claims 16 and 17 are rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305)

As to claim 16, Tanaka in view of Holladay et al. teaches all the limitation of claim 9 (see above) which claim 16 depends.

Tanaka also teaches a step for scanning documents to obtain input image data, wherein said extracting step includes extracting a plurality of image areas from the input image data obtained from documents (para. [0041]).

As to claim 17, Tanaka disclosed extracting a plurality of image areas from image data (Fig. 1 ref label 19); recognizing positional information of each extracted image area (Fig 5A ref label S4605, paragraph [0085]); recognizing at least attributes concerning whether each extracted image area is a filled closed area or an unfilled closed area (abstract, an enclosed area color detection unit that detects the colors inside the enclosed area);

Tanaka does not disclosed producing a file by synthesizing said image areas based on positional information recognized; and setting up overlaying sequence for each image area in accordance with the recognition result of the attributes, wherein said producing step includes producing file by overlaying said image areas in accordance with the overlaying sequence

Holladay et al. teaches producing a file by synthesizing said image areas based on positional information recognized (col. 5 lines 1-16); and setting up overlaying

sequence for each image area in accordance with the recognition result of the attributes (col. 4 lines 36-67), wherein said producing step includes producing file by overlaying said image areas in accordance with the overlaying sequence, which has been set up (col. 5 lines 1-16).

Tanaka and Holladay et al. are analogous art because they are in the "same field of endeavor", image processing of raster data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to set up overlaying sequence for image area and save into a file in the procedure of Tanaka.

The suggestion/motivation for doing so would have been that to optimize image processing by identifying / segmenting the image layer so that they can be processed individually and then recombined into a desired order to achieve a better output image.

Therefore, it would have been obvious to combine Holladay et al. with Tanaka to obtain the invention as specified in claim 17.

21. Claim 18 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305) as applied to claim 17 above and further in view of Bourder et al. (US Patent Application Pub. 2005/0116963).

Tanaka in view of Holladay et al. teaches all the limitation of claim 17 which claim 18 depends.

Tanaka in view of Holladay et al. does not teach that said setting up step includes setting up an overlaying sequence to overlay unfilled closed areas in front of filled closed area.

Bourder et al. teaches overlaying unfilled closed areas in front of filled closed areas (paragraph [0025]).

Tanaka, Holladay et al. and Bourder et al. are analogous art because they are in the "same field of endeavor", image processing of raster data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to overlay unfilled closed areas in front of filled closed areas in the procedure of Tanaka and Holladay et al.

The suggestion/motivation for doing so would have been that to exhibit transparency instead of covering another object when object is unfilled (Bourder et al., paragraph [0025]).

Therefore, it would have been obvious to combine Bourder et al. with Tanaka and Holladay et al. to obtain the invention as specified in claim 18.

22. Claim 19 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305) in further view of Bourder et al. (US Patent Application Pub. 2005/0116963) as applied to claim 18 above and in further view of Accad (US Patent 6,330,363)

Tanaka in view of Holladay et al. in further view of Bourder et al. teaches all the limitation of claim 18 which claim 19 depends.

Tanaka in view of Holladay et al. in further view of Bourder et al. does not teach that said sequence setting part sets up the overlaying sequence to overlay line areas in front of filled closed areas.

Accad teaches overlaying line areas in front of filled closed areas. (col. 7 line 60 – col.8 line 10).

Tanaka, Holladay et al., Bourder et al. and Accad are analogous art because they are in the “same field of endeavor”, image processing of raster data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to overlay line in front of filled closed areas in the procedure of Tanaka and Holladay et al.

The suggestion/motivation for doing so would have been that to avoid covering line by filled closed areas.

Therefore, it would have been obvious to combine Accad with Tanaka, Holladay et al. and Bourder et al. to obtain the invention as specified in claim 19.

23. Claim 20 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305) as applied to claim 17 above and further in view of Ohta et al. (US Patent 7,054,029).

Tanaka in view of Holladay et al. teaches all the limitation of claim 17 (see above) which claim 20 depends.

Art Unit: 2624

Tanaka in view of Holladay et al. also teach extracting step includes a first extracting step for extracting text image areas (Tanaka, Fig. 3, S4200) graphic image areas (Tanaka, Fig. 3, S4400), and photographic image areas (Tanaka, paragraph [0049]), from image data, and a second extracting step for extracting filled closed areas, unfilled closed areas, and line areas that do not form any closed areas from the extracted graphic image areas (Tanaka, Fig. 3, S4500, S4600, S4700, Fig.9 –Fig14); wherein said attribute recognizing step recognizes attributes concerning whether each extracted image area is a text image area, a photographic image area, a filled closed area, an unfilled closed area or a line area (Tanaka, paragraph [0049]) ;

Tanaka in view of Holladay et al. does not teach that said sequence setting step sets up the overlaying sequence for each image area of text image areas, photographic image areas, filled closed areas, unfilled closed areas, and line areas in accordance with the recognition results of said attribute recognizing part.

Ohta et al. teaches that said setting up step sets up the overlaying sequence for each image area of text image areas, photographic image areas, filled closed areas, unfilled closed areas, and line areas in accordance with the recognition results of said attribute recognizing part (Fig 2A 112, Fig. 5, Fig. 6).

Tanaka, Holladay et al. and Ohta et al. are analogous art because they are in the “same field of endeavor”, image processing of raster data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to sets up the overlaying sequence for each image area of text image

areas, photographic image areas, filled closed areas, unfilled closed areas, and line areas in the procedure of Tanaka and Holladay et al.

The suggestion/motivation for doing so would have been that to to optimize image data compression, image is segmented into groups and each group can use different image processing method (Holladay et al., col. 1 12-39).

Therefore, it would have been obvious to combine Ohta et al. with Tanaka and Holladay et al. to obtain the invention as specified in claim 20.

24. Claim 21 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305) as applied to claim 20 above and further in view of Ohta et al. (US Patent 7,054,029).

Tanaka in view of Holladay et al. and further in view of Ohta et al. teaches all the limitation of claim 20 (see above) which claim 21 depends.

Tanaka in view of Holladay et al. and further in view of Ohta et al. does not teach that said sequence setting up step sets up the overlaying sequence to overlay text image areas in front, filled closed areas and photographic image areas in back, and unfilled closed areas and line areas in between them.

It is clear that person of ordinary skill in the art to think text as most important information, so that, overlay text image areas in front, to avoid blocking line or unfilled closed area by photographic image or filled closed area, overlay lines and unfilled closed area in the middle and photographic image and filled closed area in back.

Therefore, it would have been obvious to combine Ohta et al. with Tanaka and Holladay et al. to obtain the invention as specified in claim 21.

25. Claim 23 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305) and further in view of Ohta et al. (US Patent 7,054,029).

Tanaka in view of Holladay et al. and further in view of Ohta et al. teaches all the limitation of claim 20 (see above) which claim 23 depends.

Tanaka also teaches a step of transforming image data in graphic image areas into vector data (Fig. 4);

a step of extracting closed areas based on the connection relation of a plurality of vector data (Fig. 5A); a step of judging whether the color information of internal points and external points of the extracted closed areas are the same (Fig. 6 S4710); and a step of detecting filled closed areas based on the judgment result of whether the compared color information is the same (Fig. 6 S4750).

26. Claim 24 is rejected under 35 USC 103(a) as being unpatentable over Tanaka (US Patent Application Pub. 2002/0003897) in view of Holladay et al. (US Patent 6,324,305)

Tanaka in view of Holladay et al. teaches all the limitation of claim 17 (see above) which claim 24 depends.

Tanaka also teaches a step for scanning documents to obtain input image data, wherein said extracting step includes extracting a plurality of image areas from the input image data obtained from documents (para. [0041]).

Allowable Subject Matter

27. Claims 6 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

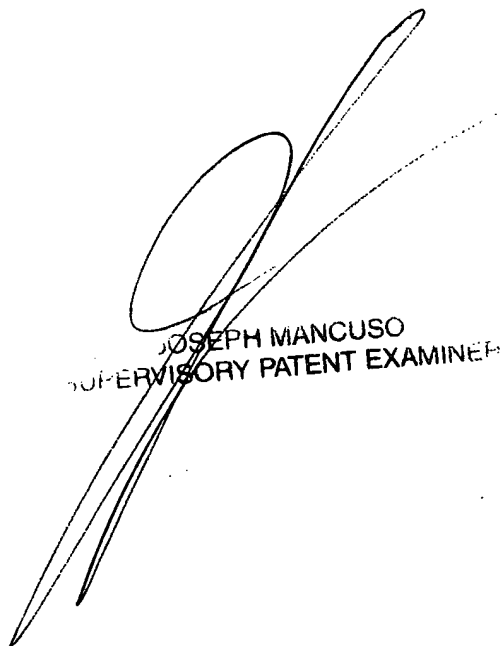
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randolph Chu whose telephone number is 571-270-1145. The examiner can normally be reached on Monday to Thursday from 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

Art Unit: 2624

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RIC/



JOSEPH MANCUSO
SUPERVISORY PATENT EXAMINER